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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,826	10/25/2000	William M. Clark, Jr.	B-3650 617089-5	4721

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EXAMINER
TRAN, THIEN F

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/696,826	Applicant(s) CLARK, JR. ET AL.	
	Examin r Thien Tran	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sh t with th correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 15-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 15-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: lines 7-8; "two spaced-apart regions" should be --two spaced-apart implanted regions--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 15-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Yahata (USPN 5,384,475).

Yahata discloses an interconnection structure (Figs. 3 and 4A-4C) for interconnecting two spaced-apart doped regions (8, 10a) of a common conductivity type (n-type) in a device comprising a first doped region 12 in the device forming a conducting channel between the two spaced-apart doped regions, the conducting channel being of the common conductivity type (n-type) and bridging a region between the two spaced-apart doped regions 8; and a second doped region 14 of opposite conductivity type (p-type) in the device, the second doped region being disposed between the two spaced-apart doped regions 8 of common conductivity type and overlying the conducting channel.

The recitations "a camouflaged interconnection" and "in a manner which inhibits reverse engineering thereof" in the claim preamble specify an intended use or field of use. It has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). It is clear that Yahata discloses the same interconnection structure as claimed wherein a second doped region 14 of p-type is formed above the first doped region 12 of n-type. The second dope region 14 of Yahata hides and conceals the conducting channel 12; therefore, Yahata structure inherently discloses a camouflaged buried interconnect 12 which helps inhibit reverse engineering.

Regarding claims 2, 6, 16 and 20, the second doped region 14 overlying the conducting channel 12 has a larger area, when view in a direction normal to a major surface of the device, than has the conducting channel 12.

Regarding claims 3, 7, 17 and 21, the two spaced-apart doped regions form drain contacts, respectively of adjacent field effect transistors.

Regarding claims 4 and 8, the second doped region 4 is provided in the device over regions having no conducting channels formed therein (see Fig. 4C).

Regarding claims 5 and 19, Yahata discloses a plurality of interconnects 12 each interconnecting selected doped regions of the plurality of spaced-apart doped regions, each interconnect comprising a buried conducting channel bridging a region between the selected doped regions. The doped region 14 of p-type is disposed over the plurality of interconnects which inherently camouflages the majority of the plurality of interconnects.

Regarding claim 15, Yahata discloses an interconnection structure for interconnecting two spaced-apart regions (8, 10a) of a common conductivity type (n-type) in a device comprising a first region 12 in the device disposed laterally of and in direct contact with the two spaced-apart regions, the first region being of the common conductivity type (n-type), the first region providing a buried conducting channel for the two spaced-apart regions; and a second region 14 of opposite conductivity type (p-type) in the device, the second region being disposed between the two spaced-apart regions of common conductivity type and overlying the first region to conceal the conducting channel.

Regarding claims 18 and 22, Yahata further discloses one additional spaced-apart region (9, 10b) of the common conductivity type (n-type), the additional space-apart region being spaced apart from the two spaced-apart regions (8, 10a); and one additional region 14 of the opposite conductivity type (p-type) in the device, the one additional region 14 being disposed laterally of and in contact with one of the two

spaced-apart regions (8, 10a) and the additional spaced-apart region (9, 10b), wherein the one of the two spaced-apart regions (8, 10a) and the additional spaced-apart region (9, 10b) do not have the buried conducting channel formed therebetween.

Regarding claims 23-26, the second doped region 14 of p-type has a depth less than a depth of the first doped region 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien Tran whose telephone number is (703) 308-4108. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

tt
March 20, 2003

Thien Tran
Patent Examiner
Technology Center 2800